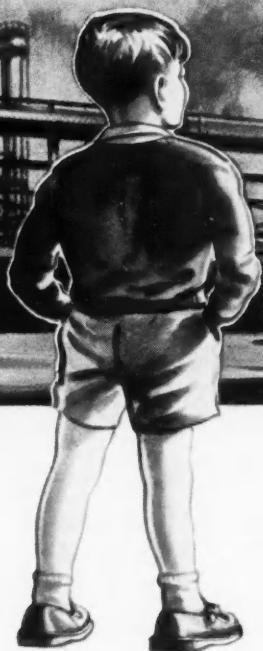


Chemical Age



MR. THERM'S LIBRARY LIST

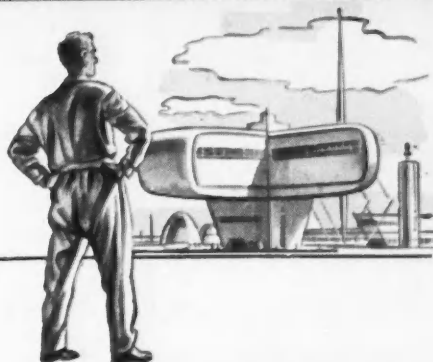
- 1
- 2
- 3
- 4
- 5
- 6



Tomorrow



ISSUED BY THE GAS COUNCIL

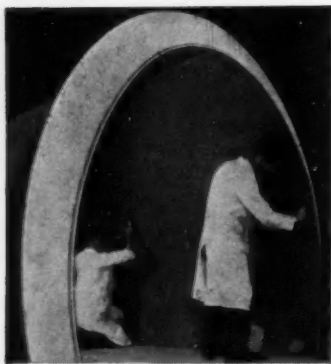


Today's Gas Industry research—for example, on forced recirculation ovens and immersion tube heating—ensures that tomorrow gas will commend itself even more to the chemical engineer demanding clean, flexible and controlled heating . . . **AND TODAY—** every industry and 12 million homes use **GAS.**

Put
CORROSION
on a
Starvation Diet
with
Mac Bond

The Nation-Wide Lining & Covering Service

No matter where you are you can avail yourself of the MacBond protective service—a service tailored to meet your protection problem. Pipes, tanks and even intricate sections like valve casings, can be protected against corrosion and abrasion. The finished job is proof against most alkalis and acids up to 200°F.



The Glasgow works handles pan-cured linings up to 26 ft. long x 10 ft. diameter. The materials used are hard or soft natural rubber, or synthetics. On site work is executed by means of perfected MACONITE, the flexible site curing ebonite.

For full technical information and advice on your problem write to—

George MacLellan & Co. Ltd

CHEMICAL PLANT DIVISION,

155-165 Shuna Street, Maryhill, Glasgow, N.W.

Telephone: Maryhill 5111/9 Telegrams: 'CAOUTCHOUC' Glasgow

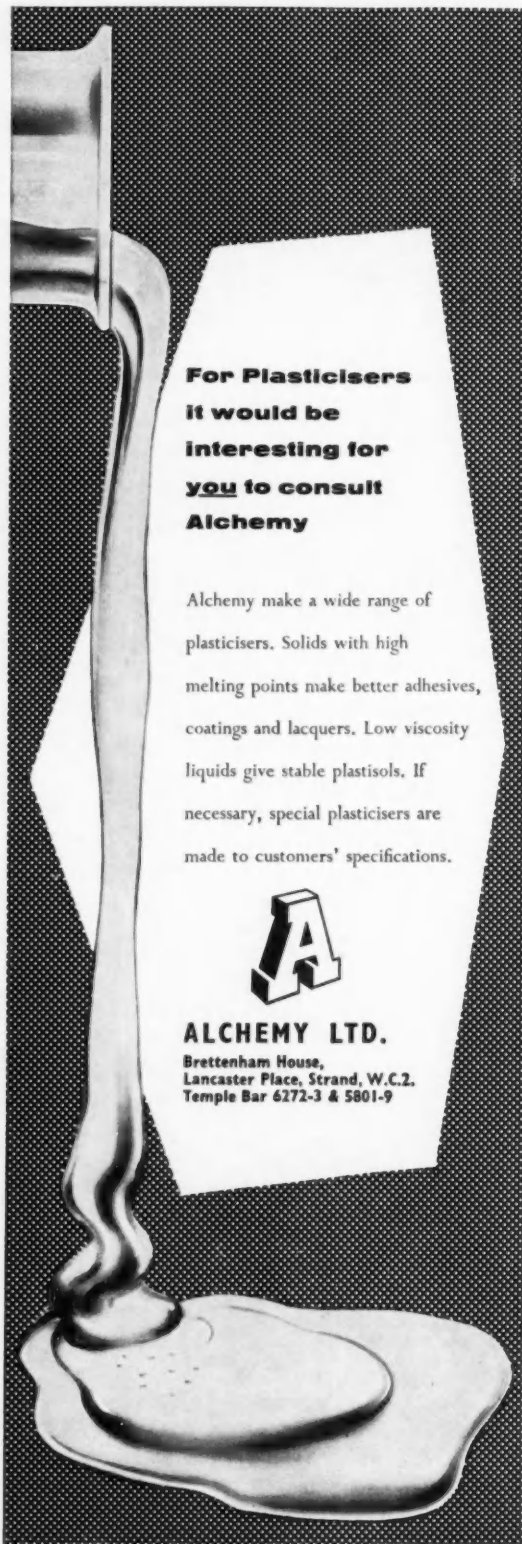
**For Plasticisers
 it would be
 interesting for
 you to consult
 Alchemy**

Alchemy make a wide range of plasticisers. Solids with high melting points make better adhesives, coatings and lacquers. Low viscosity liquids give stable plastisols. If necessary, special plasticisers are made to customers' specifications.



ALCHEMY LTD.

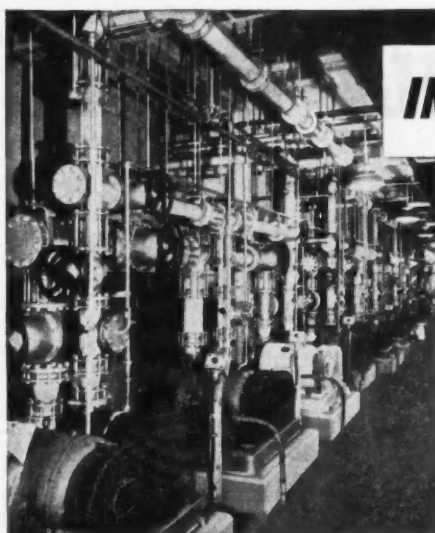
Brettenham House,
 Lancaster Place, Strand, W.C.2.
 Temple Bar 6272-3 & 5801-9



15 August 1959

CHEMICAL AGE

117



INSTALL Ceramic Pipelines and forget CORROSION

- ★ Designed for conveying corrosive liquids and gases.
- ★ For all acids and alkalis of any concentration.*
- ★ Can be operated at temperatures of 100 °C.
- ★ For internal working pressures up to 100 p.s.i.
- ★ Breakages virtually eliminated.
- ★ No armouring necessary.

Quotations gladly supplied for complete installations on receipt of details or flow data.

* Except hydrofluoric and hot concentrated caustics.

Corrosion resisting pipelines on Catalyst Plant at Joseph Crossfields & Sons Ltd., Warrington.

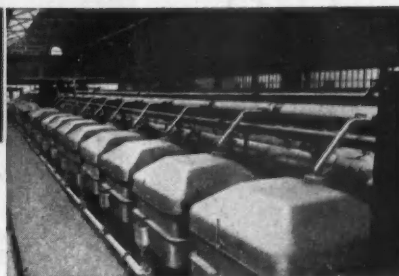
**DOULTON INDUSTRIAL
PORCELAINS LIMITED**



Send for booklet to Dept. CH.

Royal Doulton Potteries, Wilnecote, Tamworth, Staffs.

Ceramic pipelines at the Murgatroyd Salt & Chemical Company's works at Sandbach, Cheshire.



C5282

**THE
MITCHELL
ORGANISATION**

**UNIVERSAL
PORTABLE PUMPS
FOR
CORROSIVE LIQUORS**

Power or hand operated

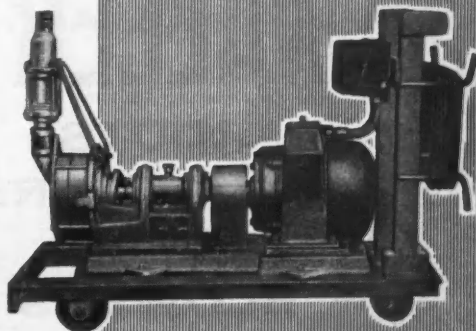
EFFICIENT

**MINIMUM
OF SPARES**

VERSATILE

PORTABLE

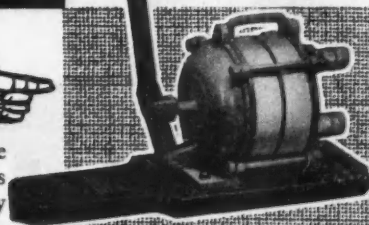
QUICK DELIVERY



General service pump
for acids and chemicals.

It will pay you to buy one
of these general utility pumps
for your works. Capacity
350 g.p.h. Total weight 65 lb.

Total head 30 ft.
Suction lift 10 ft.



A robust power-pump for
emptying sumps of acid,
pumping effluents, empty-
ing carboys, plating tanks and
vessels and discharging chemical
liquids and acids from road
tankers. Capacity 780 g.p.h.
Total head 20 ft. including a suction
lift equivalent to 10 ft. of water.
Fitted with 1½ h.p. motor.

L. A. MITCHELL LIMITED
HARVESTER HOUSE, 37 PETER ST.,
MANCHESTER 2
TEL. BLA 7224/7 AND 7824/7
LONDON OFFICE: PORTLAND HOUSE
73 BASINGHALL STREET, LONDON, E.C.2.
TEL. MET 8321/2

FOR THE
TRANSMISSION OF

GAS
OR
AIR

YOU
NEED

WALLER

**ROOTS
EXHAUSTERS
OR
BLOWERS**

Capacities range from
1,000 up to 1,000,000 cu. ft. per hr.

GEORGE WALLER & SON LTD

PHOENIX IRON WORKS · STROUD · GLOS
Telephone Brimscombe 2301/2

Members of the Society of British Gas Industries

BULK LIQUIDS



ACIDS CHEMICALS
ALKALIS SOLVENTS
CAUSTICS EMULSIONS
PETROLEUM PRODUCTS

MONKTON MOTORS LTD
WALLINGFORD ROAD,
UXBRIDGE, MIDDX. 5574/5

Continental Enquiries Welcomed

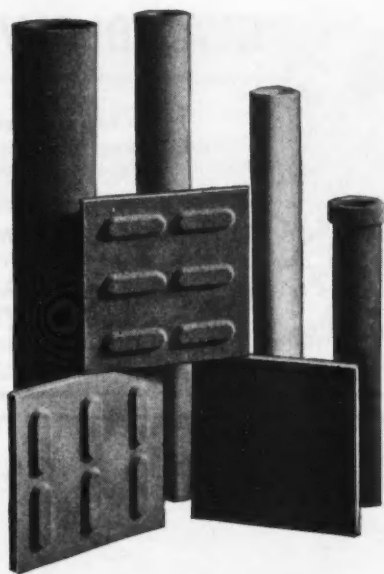
**ETHYLENE
GLYCOL
BSS 2537**

Immediate Delivery
From London
Bulk Storage

GLYCOL ETHERS

KW
CHEMICALS LTD
KW

55/57
HIGH HOLBORN
LONDON W.C.1
T.A. CHLORATE
T.N. CHANCERY
7981/5



Versatile and Consistent

Aerox Porous Ceramics, with outstandingly uniform pore density, serve industry in a thousand ways:-

As **FILTERS** for compressed air or gas to eliminate solid particles and and liquid droplets; sterilisation; cleaning of exit gases; recovery of valuable solids from liquors, etc. etc.

As **DIFFUSERS** for effluent treatment; gas absorption; flotation processes, etc. etc.

As **DIAPHRAGMS** for electrolytic processes.

As a **POROUS BASE** for fluidised discharging, conveying and fluid bed reaction processes.

CAN YOU SUGGEST THE 1001st?



AEROX LIMITED

Ceramic Works, Hillington, Glasgow, S.W.2

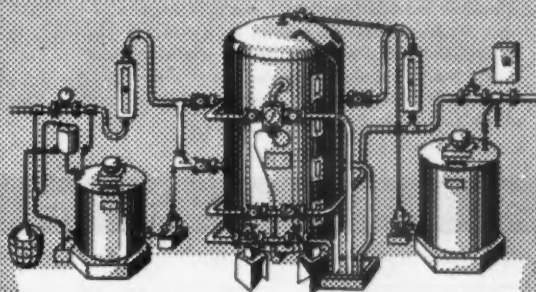
Telephone—Halfway 4615/9

Engineering Works, Crompton Way, Crawley, Sussex.

Telephone—Crawley 25077

PURE WATER

*for Industrial
purposes*



ION EXCHANGE

is the most up-to-date method of producing pure water for all requirements, and it does this at a fraction of the cost of distillation.

Literature, describing the full range of Ion Exchange processes and plants, available on application.

NECKAR

NECKAR WATER SOFTENER CO. LTD.
Artillery House · Artillery Row · London, S.W.1.



A clear light for a clean shot— thanks to B.D.H.

From the earliest days of fluorescent lighting B.D.H. have produced the specially pure chemicals which are the basis of the irradiated materials, or 'phosphors', in the fluorescent tube. For the electrical industry*, and for many others, where advanced technical processes demand chemicals of the highest standard and impurities are measured in millionths the first choice is B.D.H.

* Chemicals for cathode ray tubes, radio valves, radar equipment. Transistor grade acids. Selenium recovery and refining.

B.D.H. FINE CHEMICALS FOR INDUSTRY



THE BRITISH DRUG HOUSES LTD. B.D.H. LABORATORY CHEMICALS DIVISION POOLE, DORSET

Compressors for Industrial Gases

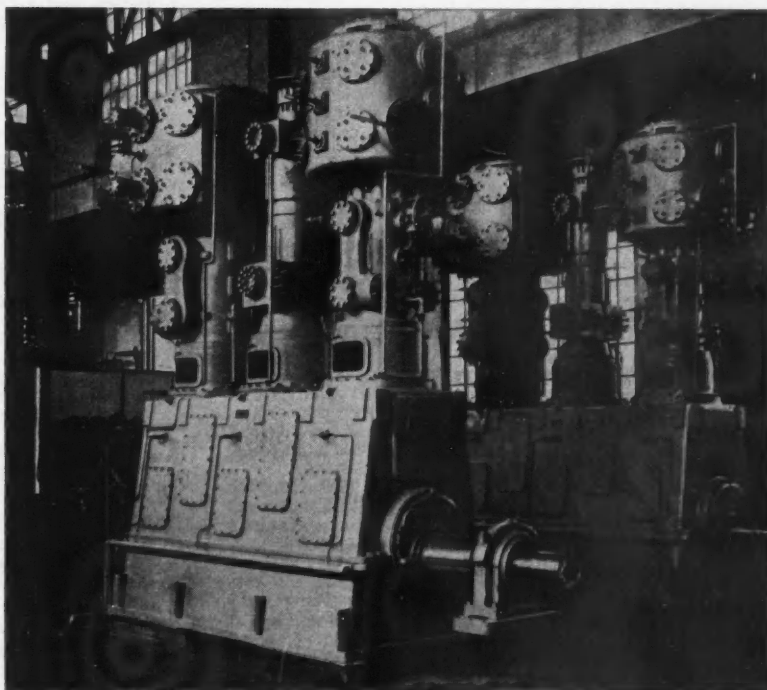
Moderate speed compressors carefully designed for reliability, are available in both vertical and horizontal arrangement from small capacities up to units of over 5,000 H.P. and very high pressures.

The illustration shows two vertical, three crank, six stage compressors each with a capacity of 3,000 cu. ft. per minute and a delivery pressure of 326 atmospheres.

LLOYD & ROSS LTD.

58 VICTORIA STREET, S.W.1
TELEPHONE VICTORIA 4873

Maschinenfabrik ESSLINGEN Germany



Classified Advertisements

EDUCATIONAL

UNIVERSITY OF MANCHESTER
THE NEXT SESSION COMMENCES ON
TUESDAY, 13th OCTOBER, 1959.

PATENTS

The Proprietors of British Patent No. 732652 for "AN IMPROVED METHOD OF EXTRACTING NAPHTHALENE FROM TAR DISTILLATION FRACTIONS", desire to enter into negotiations with a firm or firms for the sale of the patent or for the grant of licences thereunder. Further particulars may be obtained from MARKS & CLERK, 57 and 58 Lincoln's Inn Fields, London, W.C.2.

The Proprietors of British Patent No. 744280 for "PROCESS FOR THE PREPARATION OF POLYMERS", desire to enter into negotiations with a firm or firms for the sale of the patent, or for the grant of licences thereunder. Further particulars may be obtained from MARKS & CLERK, 57 and 58 Lincoln's Inn Fields, London, W.C.2.

PLANT AND MACHINERY FOR SALE

Brand New **COCHRAN** Vertical and **ECONOMIC** Self-contained **STEAM BOILERS** in stock, also all sizes reconditioned and guaranteed. List on request.

STAINLESS STEEL TANKS, PANS, CONDENSERS, PLATES, VALVES AND COCKS. Very wide selection.
80 gall. S.S. Jacketed Mining Pan, tilting type.

Ten new enamel-lined **ENCLOSED TANKS**, 150/1,000 galls.

FRED WATKINS (ENGINEERING) LTD.,
COLEFORD, GLOS.

Phone: Coleford 2271/2.

600

No. 2 **COMPOUND BALL/TUBE MILL** by **Wm. Johnson**, with dragonite metal liners. Dimensions approx. 9 ft. long x 2 ft. 4 in. dia. internally, arranged in two compartments. Driven by 20 h.p. 400/350 cycles motor. Motor driven Pitch Cracker fitted feed end. Approx. 2 tons of hard white cast balls.

BATCH BALL MILL by **Edgar Allen**, type No. 6A, 40 in. x 40 in. internally fitted renewable 1 in. thick Chromex Chromium steel liners. Opening 12 in. x 8 in. with bolted cover plate. Supported in 'A' frames with plain bearings. F & L pulley drive. **TWO AVAILABLE.**

UNUSED No. 10 SWEETLAND PRESSURE FILTER by **Dorr Oliver**, cast iron and mild steel construction, chamber 9 ft. x 31 in. i.d. Bottom half hinged with counterbalanced capstan closing gear. Fitted 18-30 in. dia. bottom drainage type woven wire leaves with filter bags. Filtering area 174 sq.ft. 50 p.s.i. w.p. With sight glasses, top wash water manifold, receivers and supporting framework.

TYPE 3C LOW TEMPERATURE STAINLESS STEEL VACUUM EVAPORATOR by **Lemale**, capacity 440 g.p.h., with motor driven Air Ejector Condenser and Pump suitable 10 p.s.i. steam pressure, 30 in. vacuum, concentration 2 : 1. **TWO AVAILABLE.**

DOUBLE-TROUGH JACKETED BEKEN MIXER, 56 gallons capacity, 25 in. x 26 in. x 26 in. deep, tilted by 1/4 h.p. motor with reversing starter. Hinged cover, jacket suitable 110 p.s.i. w.p. Drive by 12 1/2 h.p. 380/420/350 cycles motor with starter.

UNUSED WATER PRESSURE SAND FILTER, 1500 g.p.h., 6ft. dia. x 4 ft. 3 in. deep on straight with 11 in. dished top and bottom. Top dishing fitted 18 in. x 12 in. oval manway, mounted on four short legs. Mild steel welded construction, 43 p.s.i. w.p. Gauges, pipework and valves included.

UNUSED COLD STORE PLANT by **Wm. Douglas**, 100 tons capacity, comprising two 4 1/2 in. x 4 1/2 in. Ammonia Compressors, each driven by Lister Diesel Engine; one Horizontal Shell & Tube Condenser, surface area 86.5 cu.ft.; one Liquid Receiver; Air Cooler Coils; one double door, two single left-hand hung doors, three single right-hand hung doors.

PLANT AND MACHINERY FOR SALE, continued

STAINLESS STEEL ACID RECOVERY TOWER constructed FMB material in four sections. Bottom section 3 ft. dia. x 4 ft. 6 in. x 3/16 in. thick with 9 in. offset flanged branch. Two sections each 6 ft. long in 10G and top section 10 in. deep with 9 in. dia. flange. Four distributor plates in 16G and filled with porcelain rings.

UNUSED STAINLESS STEEL CALANDRIA fitted 90 tubes 1/2 in. bore x 12G x 36 in. long with end plates 21 in. dia. and bolt holes at 19 1/2 in. pcd. 7 1/2 in. dia. plain centre tube, mild steel casing fitted two 2 in. socket connections. Surface area approx. 60 sq.ft.

UNUSED STAINLESS STEEL VAPOUR COLUMN, 17 1/2 in. dia. x 23 ft. 6 in. high construction approx. 10G material. Top section fitted 7 in. bore outlet and 2 in. dia. single turn perforated coil, approx. 2 ft. high, bolted to 9 ft. 6 in. plain section in turn secured to 10 ft. 6 in. section. Bottom portion 28 in. high. Fitted at intervals with 1/2 in. dia. perforated retaining plates and thermometer pockets. Quantity of porcelain Raschig rings included.

No. 15 **ROTARY DRUM DRIER** by **Buell**, approx. 26 ft. long x 5 ft. dia., flange bolted in two halves of 1/2 in. riveted steel construction. Drier on two roller paths, arranged for solid fuel firing. Complete with High Efficiency Cyclone, fans, ducting, etc. **ROTARY DRIER** by **Manlove Alliott**, 23 ft. 6 in. long x 6 ft. dia. with extra 6 ft. panelled section with 1/2 in. mesh screens. Drier shell 1/2 in. mild steel welded construction with curled serrated flights and spiral plates. Mounted on two sets of rocker type trunnion rollers 6 in. face. Gear driven by 20 h.p. 400/350 cycles motor. With two 4-bank Gilled tube Steam Heaters and 24 in. dia. Paddle type Fan, 6 ft. dia. Cyclone and Screen Discharge Hood.

ELECTRICALLY OVERDRIVEN SUSPENDED TYPE CENTRIFUGE by **Watson Laidlaw**, 48 in. dia. x 21 in. deep **STAINLESS STEEL BASKET**, 3/16 in. perforations with rubber covered monitor casing, 6 in. flanged run-off.

UNUSED STAINLESS STEEL JACKETED TILTING MIXING PAN by **Brierley, Collier & Hartley**, 30 gallons capacity, inner pan 2 ft. 2 in. x 1 ft. 10 in. deep with hemispherical bottom. Stainless steel anchor type agitator overdriven through gearing by Hydraulic Motor. Pouring lip is jacketed, and tilting is by handwheel through gearing with counterbalanced weights. **TWO AVAILABLE.**

UNUSED STAINLESS STEEL JACKETED TILTING MIXING PAN by **Brierley, Collier & Hartley**, 60 gallons capacity, inner pan 3 ft. 4 in. x 3 ft. 8 in. deep, with hemispherical bottom. Stainless steel anchor type agitator overdriven through gearing by Hydraulic Motor. Pouring lip is jacketed, and tilting is by handwheel through gearing with counterbalanced weights. **TWO AVAILABLE.**

STAINLESS STEEL JACKETED TILTING MIXER, 3 ft. 4 in. dia. x 2 ft. 8 in. deep with hemispherical bottom, stainless steel agitator overdriven through gearing and F & L pulleys. Tilting by handwheel and worm gear. **THREE AVAILABLE.**

STAINLESS STEEL JACKETED MIXING PAN, 1 ft. 8 in. dia. x 1 ft. 2 in. deep, approx. 16 gallons capacity. Perforated propeller type agitators with two bottom outlets with lever operated valves. Loose stainless steel covers in halves. Jacket suitable 15 p.s.i. w.p. **FOUR AVAILABLE.**

STAINLESS STEEL JACKETED MIXER, 600 gallons capacity, 5 ft. 6 in. dia. x 4 ft. 0 in. deep on straight with dished bottom. Gate type agitator driven by 2 h.p. 400/440/350 cycles motor. Included two stainless steel loose fitting covers. Jacket suitable 5 p.s.i. w.p.

STAINLESS STEEL JACKETED MIXER, 200 gallons capacity, 3 ft. 7 in. dia. x 3 ft. 1 in. deep on straight with 24 in. cone bottom. Spiral type stainless steel agitator driven by 1 h.p. 400/350 cycles motor. Stainless steel cover in two halves. Jacket suitable 5 p.s.i. w.p.

STAINLESS STEEL PRESSURE VESSEL, 4 ft. 8 in. dia. x 5 ft. 2 in. long on straight with dished ends of 5/16 in. plate welded construction. **THREE AVAILABLE.**

STAINLESS STEEL VERTICAL TOTALLY ENCLOSED STORAGE vessel, 5 ft. dia. x 5 ft. 9 in. deep on straight.

STAINLESS STEEL THREE-THROW HOMOGENISER by **G. & J. Weir**, type 2A, rams 1 in. dia. x 2 1/2 in. stroke.

STAINLESS STEEL THREE-THROW Q.P. HOMOGENISER by **Omerod**, type D.C.8/F.E., rams 1/2 in. x 1 1/2 in. stroke, capacity 60/70 g.p.h.

GEORGE COHEN

Sons & Co. Ltd.,

Wood Lane, London, W.12.
(Shepherds Bush 2070)

PLANT AND MACHINERY FOR SALE, continued

MORTON, SON AND WARD LIMITED
offer**STAINLESS STEEL VESSELS**

One **TANK** 10 ft. by 2 ft. 6 in. dia. totally enclosed, suitable for 20 lb. p.s.i. w.p.
 One **CRYSTALLIZING PAN** 4 ft. dia. by 1 ft. 6 in. deep, detachable lid, with or without jacket.
 Several s.s. **COILS** from 2 ft. to 7 ft. dia.
 Assortment of s.s. **VALVES, PLUG COCKS** etc., from $\frac{1}{2}$ in. to 3 in.
 Quantity of s.s. **TUBING** and s.s. **FLANGES**.
 All above second hand and in good condition.

NEW UNITS in stainless or mild steel made to requirements.
CONDENSERS, MIXING VESSELS, JACKETED PANS with or without mixing gear.
'MORWARD' 'U' shaped TROUGH MIXERS with or without jackets.
TANKS, CYLINDERS, RECEIVERS, PRESSURE VESSELS and **AUTOClaves**.
 Stirring gear can be fitted to any vessels.
New PORTABLE STIRRING UNITS with clamp-on attachment to requirements.

New **MONO** pumps and other second hand **PUMPS** in stock.

Enquiries invited:

MORTON, SON AND WARD LIMITED,
DOBCROSS, OLDHAM,
Lancs.
 Phone Saddleworth 437

PHONE 98 STAINES

S.S. 1,500 gall. Cyl. Tank 9 ft. x 6 ft. diam.
 S.S. Unused Jac. Pans 20 in. x 17 in.—45 W.P.
 S.S. Unused Gas Heated Jac. Pans 26 in. x 21 in. and 30 in. x 24 in.
 S.S. Clad Tanks 750 gall. 7 ft. x 3 ft. 3 in. (8).
 S.S. Pans or Tanks—20 in. x 28 in. deep (18).
 S.S. Mixing Vats 280 galls. each A.C. (2).
 S.S. Tanks 4 ft. diam. x 3 ft. deep. 200 galls. (3).
 S.S. Unused Elec. Heated Tanks 4 ft. x 3 ft. 6 in. x 10 in. deep. 70 galls. Capacity A.C. (10 available).
 S.S. Homogenizer 3 plunger type 2 H.P. A.C.
 S.S. Plunger Pumps 4 in. x 6 in. stroke A.C. (2).
 S.S. Unused Cyl. Mixers 90 and 300 galls.
 "Z", Fin Blade, "U" Trough and Cyl. Mixers all types and sizes in stock.

Pumps, Receivers, Hydros, Condensers, etc.

Send for lists.

HARRY H. GARDAM & CO. LTD.,
 100 CHURCH STREET, STAINES.

CHARCOAL, ANIMAL AND VEGETABLE, Horticultural burning, filtering, disinfecting, medicinal. Also lumps, ground and granulated. **THOMAS HILL-JONES, INVICTA WORKS, BOW COMMON LANE, LONDON, E.3 (TELEPHONE: EAST 3285).**

Mild Steel Vertical steam jacketed Vulcanising Pan, 48 in. diam. by 54 in. deep, heavy domed cover plate 2 in. thick, $1\frac{1}{2}$ in. locking bolts, 100 lbs. p.s.i. Good condition.

THOMPSON & SON (MILLWALL) LTD.,
 6 CUBA STREET, MILLWALL, E.14
 Tel.: EAST 1844

PLANT AND MACHINERY FOR SALE, continued

SIX GALLON Staybright Stainless Steel Containers 16" x 11" x 11" tapering sides, rounded corners, double lid. Originally £12 each, to clear 30/- each for quantity, further reduction for large order.
 25 gallon S.S. Tanks 28" x 8" x 30" deep, open top. To clear £5 each. L. Solloman Ltd., Beaufort St., Manchester 3. BLA 4571 or 0986.

STAINLESS STEEL Double Cone Mixer 2' x 3'. Morton 20-gallon Double "Z" Mixer. Lying Willow Tree Works, Swallowfield, Berkshire. Apply: Winkworth Machinery Ltd., 65 High Street, Staines. Telephone 1010.

SCIENTIFIC SERVICES

SILICA CONES AND SOCKETS, SILICA TUBING, POLISHED SILICA DISCS AND GLAZED SHEET ex stock from: **Jencons (Scientific) Ltd., Mark Road, Hemel Hempstead, Hertfordshire. Boxmoor 4641.**

SITUATIONS VACANT

GOVERNMENT OF HONG KONG

Chemist, Medical and Health Department
(Government Chemist's Section)

Qualifications: Honours degree in chemistry or equivalent professional qualifications. At least three years post-qualification experience.

Age: Not over 35.

Duties: General analytical and supervisory work.

Terms of Appointment: On probation (two years) to the permanent and pensionable establishment with emoluments in the scale £1,245 - £2,179 p.a. Cost of living allowance. Quarters provided if available at rental. Free passages. Generous leave. Free medical attention. Taxation at local rates.

Apply to Director of Recruitment, Colonial Office, London, S.W.1. State full name, age, qualifications and experience. Quote BCD 117/51/018.

WORK WANTED & OFFERED

CRUSHING, GRINDING, MIXING and DRYING for the trade
THE CRACK PULVERISING MILLS LTD.

Plantation House,
Mincing Lane,
London, E.C.2

'The Monthly Freight Review'

Edited by C. F. H. CUFLEY, F.I.C.S.

Coverage and comment on all aspects of world freight markets. Statistical supplements listing charterings relating to fertilisers, minerals and heavy chemicals with analysis of freights in leading trades over past four years.

Issued on the last day of each month.

Price (by airmail) 10 gns. per annum all countries excluding U.S.A., Far East, etc., for which a surcharge of £2 p.a.

SHIPPING STUDIES LTD.

GREAT BURCHES ROAD, THUNDERSLEY, ESSEX
 Tel: RAYLEIGH 1122 ROYAL 5590



CLOSE CUT!

CAROMAX

'CAROMAX' — the new close cut, high boiling aromatic solvent for paints, lacquers or printing inks. Samples are now available.

CARLESS CAPEL & LEONARD LTD.

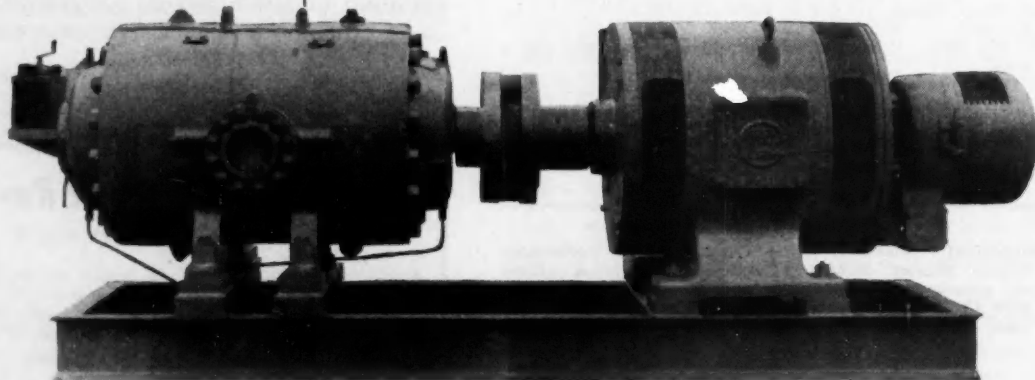
HACKNEY WICK, E.9 AMHERST 5500

SERVICE FOR TODAY, FOR TOMORROW AND FOR YEARS AHEAD



**HOLLAND-SLM
ROTARY COMPRESSORS AND VACUUM PUMPS**

Initial efficiencies maintained at low cost throughout years of continuous day and night service.



The B. A. Holland Engineering Co. Ltd.

LINDO LODGE, STANLEY AVENUE, CHESHAM, BUCKS.

Telephone : Chesham 8406/8

Telegrams : Picturable Chesham

Works: SLOUGH, BUCKS

PROPRIETORS: BENN BROTHERS LIMITED
(ESTABLISHED 1880)

15 August 1959
P. 125

Since July 1958 kerosene has been used as an aid in copper filtration by Electrolytic Zinc Co. of Australasia, Ltd., at their Rosebery Mill plant. Some improvement in moisture content of the filtered concentrate has resulted, it is reported, and also a decrease in truck loading time of approximately 40%. This decrease is attained because the filter cake forms small pellets as it falls down a steeply inclined chute to concentrate storage bins and in this form the concentrate rills readily into rail trucks from the storage bins. The kerosene is added at the rate of 0.25lb./ton of dry concentrate to the vent pipe of the Wilfley pump feeding the copper concentrate filter. This results in satisfactory dispersion.

oooooooooooooooooooo
 O DISTILLATES O
 O by Alembic O
 ooooooooooooooooooooo

Now it can be told! On page 125 of this our last emergency edition Chemical Age gives the "inside information" on how it was done. Spurred by the sight of his shirt-sleeved editor folding and inserting copies of C.A. into envelopes - and despite an utter lack of sympathy with pleas for an allocation of more space for this column - even the normally lethargic Alembic put his shoulder to the proverbial wheel. My modest contribution included collecting 3 cwt. of paper from a City paper merchant and delivering it to the firm that duplicated this news section. Before Distillates can return to normal next week, I shudder to think of the collating, stapling, folding and inserting that will have to be done to ensure that readers receive this last emergency issue!

ooo000ooo

A few weeks ago I saw the only production unit in the free world for the manufacture of nuclear grade photographic emulsion (see C.A., 25 July, p.67). With their work in this field, Ilford Ltd. can claim to have produced the first photographic material ever to be put into orbit round the earth - in the U.S. satellite Discoverer II. Mr. C. Waller, chief emulsion chemist, told me that success of the venture depended on being able to maintain a consistent standard of material. Once this had been mastered, it was possible to go ahead with regular production. Though Ilford's hold a virtual world monopoly there is little profit in the venture because total quantities are relatively small. (Annual output amounts to about 500 litres). The team is enthusiastic about this work and takes the view that the scientific task of measuring cosmic rad-

iation at great altitudes depends on a company like Ilford's playing their part.

ooo000ooo

To stimulate new ideas on commercial use for levulinic acid, Quaker Oats launched a 'Big Idea' contest. Cash prizes totalled \$10,000. First-prize winner, John T. Yoke, Arizona University, suggested the use of levulinic acid as a starting material for a new class of phosphorus-containing compounds, with possible applications as chelating agents, solvents and petrol additives. Second-prize winner, George Busch, Balfour-Culture Ltd., Montreal, proposed that the acid be used to make drugs that increase haemoglobin content of blood. Other uses suggested included: a new class of surface-active agents; sulphur-containing derivatives; and as lubricating oil additives. At present, largest commercial outlet for levulinic acid is the production of diphenolic acid.

ooo000ooo

The Paris conference staged last month on market research by the European Productivity Agency and the Organisation for European Economic Co-operation made history. It was the first attempt to get world experts on this subject together. From reports that reach me it seems that most of the 150 participants were mainly concerned with consumer products or projections of gross national product. Market research to most delegates was a question of gathering statistics and little more. The American concept of chemical market research - a most useful function - is not appreciated to the same extent in this country. At present most of such research is undertaken by the big chemical companies, who are not yet used to the idea of employing the services of independent consultants in this field. The advantages are many - not the least of them is the fact that they enable the companies concerned to remain anonymous.

LUSTIN MOULD RELEASE AGENTS.

Charles H. Windschlag Ltd., 1 Leadenhall St., London, E.C.3, have been appointed sole U.K. agents for four Lusten mould release agents manufactured by Lange and Seidel of Nuernberg. The four agents are Lusten KE10, universal mould release agent, KE95 for glass clear mouldings and phenolic resins, KE200 for polyesters, epoxy resins, etc. and KE400 for separation of reinforced plastics manufactured under conditions of heat and pressure. Range of stabilisers manufactured for p.v.c. by Durham Chemicals Ltd., has been extended by the addition of Nuostabes (in liquid form), hitherto manufactured and marketed in the U.S. by the Durham Group's U.S. associates Nuodex Products Co. Distributors in the U.K. of all Durham Group products are Durham Raw Materials, Ltd., 1-4 Great Tower St., London.

AMBER CHEMICAL TRADING PACT.

A reciprocal trading arrangement has been made between Amber Chemical Industries of the U.K. and the D. A. Stuart Oil Co. of Chicago and Detroit (in association with Canadian D. A. Stuart) to operate from August 1. Amber Chemical becomes sole distributor and licensee in the U.K., Eire, South Africa, Australia and New Zealand for all products of D. A. Stuart. The latter will be sole distributor and licensee in the U.S., Canada and South America for Amber products.

RADIO-ACTIVITY ADVISORY SERVICE

Elliott Nucleonics Ltd., a member of the Elliott-Automation group, have now inaugurated a new advisory and supply service for installed health monitoring equipment for areas where radioactive materials are used.

The service will make available advice on the most appropriate types of instruments to be installed in each individual case and the company will undertake the system engineering, supply, and installation of equipment, as may be necessary.

I.C.I. SILICON. A larger plant than the pilot plant brought into operation on Merseyside last year by the I.C.I. General Chemicals Division for semi-conductor grade silicon is now nearing completion. The company has issued a new booklet entitled 'Silicon for Semi-conductor Devices'.

SODIUM HYPOCHLORITE. The Board of Trade have authorised the removal from the Register of Restrictive Trading Agreements of particulars of the agreement between 12 makers of sodium hypochlorite solution. The agreement concerned an undertaking by customers not to rebottle the solution in containers marked with any indication of food or drink.

BORAX EXPANSION. Following a study of European conditions Borax Francais S.A. plan to embark on a further capital expenditure programme of Fs. 500m. in order to modernise and supplement existing services at their factory and also to provide for considerable further expansion in boric acid production; this is additional to the extension in progress which was announced earlier, and which involves capacity equal to double the existing production.

CHEMICAL CONTROL OF BOTRYTIS. Discovery of a new chemical compound which, it is claimed, controls botrytis in lettuce without affecting growth and is effective against tulip 'fire' in plants grown under glass and against stem botrytis in tomatoes is reported by Boots Pure Drug Co. Ltd. Trade name of the new product is "Allisan". More details will be released shortly.

LATE NEWS. Sir Hugh Linstead secretary of the Pharmaceutical Society, succeeds the late Mr. R. Foot, M.P., as a member of the Medical Research Council.

Mr. A. L. Davies, managing director of Chemstrand Ltd., has sailed for the U.S. with his family on a three-week combined business trip and holiday.

THIN CHROMIUM SHEETS DEVELOPED
BY METAL DIFFUSIONS

PRODUCTION of thin chromium sheet, hitherto an unobtainable material, is now possible. Using a new technique, the Dicrom chromising process, developed by Metal Diffusions Ltd., Isleworth, Middlesex, purity of the sheet is stated to be as high as 96%. This important development has resulted from research carried out by Mr. Eric G. Weatherley, technical works director of Metal Diffusions Ltd., and is considered akin to the 'lost-wax' technique employed in the manufacture of jet-engine blades: the sheet-steel pattern (like the wax) virtually disappears, being replaced in the Dicrom process by chromium sheet of similar dimensions and finish. Commercial and scientific use of the sheet, described as being surprisingly ductile, are now being assessed, but one major application is likely to be linings for chemical vessels and for fuel chambers in space rockets.

High-Purity Deposits.

Various methods of chromising have been in commercial operation since 1941, but only two methods have been operated in the U.K. to any appreciable extent. Last year, Metal Diffusions Ltd. brought the Dicrom process of metal diffusion into operation. With this process it is possible to produce a depth of diffusion of between 1 and 15 thousandths of an inch, depending on the metallic analysis of the article treated; and a particular advantage is stated to be the high purity of the chromium deposited on the surface - always above 60% compared with the usual surface purity of 40-45%.

In cases where special resistance to oxidation is required, at temperatures up to 1,180°C, mild steel can be treated to afford the same resistance to corrosion as that afforded by a 40%-Ni/22%-Cr alloy steel, usually, Metal Diffusions say, at between one-third

and one-half of the cost. Using combined Cr/Al diffusion, effective resistance to corrosion at temperatures up to 1,305°C is achieved by Dicrom treatment.

Adequate resistance to corrosion is claimed for this chromising process when sulphur-bearing gases are present. In more acid conditions, more protection is achieved by alloying another metal with the chromium. Also the higher percentage of surface chromium provided by the Dicrom process permits fuller use to be made of the physical properties of chromium, i.e. its extreme hardness, resistance to abrasion, immunity to attack by many chemicals. Furthermore a Dicrom-chromised surface can be electro-polished to produce a finish comparable with chromium plating. Overall cost is stated to be competitive.

Applications suggested for the Dicrom process include equipment in contact with flue gases, pumps and other plant handling corrosive fluids, chemical plant, etc.

NEW STANDARD OF METRIC MEASURE. A new standard metric measure of 25 millilitres has been introduced following representations that a measure of this size should be made legal for use in trade, and after consultation with organisations representing the medical and pharmaceutical professions. The new order will be published as the Weights and Measures (Board of Trade Standard 25 millilitres) Order, 1959/S.I. 1959 No. 1315, price 3d, by post 5d, obtainable from H.M.S.O., Kingsway, London WC2, and branches.

VACUUM EQUIPMENT. A new company, Torvac Ltd., has been formed and centred on Cambridge to advise on design and manufacture of all types of special vacuum equipment for use in the high, medium or rough ranges, with special emphasis on metallurgical equipment and batch and continuous metallising. Associated with the new concern is Mr. M.E. Boston as vacuum engineering consultant.

.....
 ' EXPERIMENTS WITH KIER '
 ' EFFLUENT AT STALYBRIDGE '

LATEST report of the North-Eastern Area Committee of the Mersey River Board, referring to the Cotton Cellulose Co. Ltd., (Bleachers' Association Ltd.), of Constablelee Works, Rawtenstall, observes that following a meeting of a pollution sub-committee with representatives of the Bleachers' Association towards the end of last year, the association decided to install a full-scale plant at the works by which they expected to remove the sulphides and the alkalinity of their most polluting effluent. This was then expected to take six months to install but for various engineering reasons completion of the work will take about another four months.

South-Eastern Area Committee, referring to Calico Printers' Association Ltd., Gartside and Co., (Manchester) Ltd., Buckton Vale Works, Stalybridge, notes that this company discharges up to 1,750,000 gall. of effluent a day to the Carr Brook, a tributary of the River Tame. Experiments have been carried out by the Stalybridge and Dukinfield Joint Sewerage Board to see whether about 15,000 gall./day of the company's strongest (kier) liquors might with advantage be discharged to the sewers. The Sewerage Board are understood to be likely to agree to accept the liquors for an experimental period provided that the River Board will accept a possible deterioration in the effluent from the sewage works. The committee has agreed to this.

COTTON AND RAYON RESEARCH MERGER?

The British Cotton Industry Research Association and the British Rayon Research Association are investigating the question of a merger. Councils of the associations met in Manchester last week, together with representatives of the Department of Scientific and Industrial Research, the Board of Trade, the Cotton Board and the

Man-Made Fibres Producers Committee. Against the background of reorganisation of the industry, arising from the Government's redundancy and re-equipment proposals, the possibility of a fusion of the two organisations was considered. A working party has been set up to consider the problems involved and the form that practical arrangements might take.

NEW B.O.G. WORKS AT ST. HELENS.

New works are being built by British Oxygen Gases Ltd. at St. Helens for the supply of oxygen and other industrial gases to that area. Construction began on 29 June, and the works, to be known as British Oxygen Gases Ltd. St. Helens Works, will go into production about December this year. Producing plant is being built by British Oxygen Engineering Ltd. with buildings and civil work being undertaken by Contractors (Manchester) Ltd. with D.O.E. as architects.

.....
 ' POSSIBLE CURTAILMENT OF PRODUCTION '
 ' AT I.C.I.'S PRUDHOE WORKS '

EFFORTS to attract more industries to the area and to expand the local works of Imperial Chemical Industries Ltd. were discussed at a meeting of Prudhoe (Northumberland) Urban Council. Mr. R. Speir, M.P. for the area, said, in a letter to the council, that he had approached I.C.I. about their Prudhoe works and had been informed that as there was a world over-production of sulphate of ammonia, far from extending the Prudhoe Works, there was a possibility that they might have to be curtailed. Mr. Speir said he had suggested to I.C.I. that they should begin production of a new product at Prudhoe, and the company had stated that this proposal would be considered.

CIBA ARALEDITE CHARTS. A folder with charts showing how to use Araldite epoxy resin adhesives for different materials is published by CIBA (A.R.L.) Duxford, Cambridge. A folder for their technical notes can also be supplied.

X:X:X:X:X:X:X:X:X:X:X:X:X:X:X:X:X
 X
 X CR-NI-MO STEEL SOLVES AMMONIUM X
 X SULPHATE CORROSION PROBLEM X
 X:X:X:X:X:X:X:X:X:X:X:X:X:X:X:X:X

ONE of the largest sources of ammonium sulphate in the U.K. is at the by-product plant of the Steel Co. of Wales, Port Talbot, South Wales. Since 1951, large tonnages have been produced from the gas from coke ovens combined with ammonia gas from the ammonia still. Ammonium sulphate crystals settle in the bottom of the saturator and the slurry is drawn off continuously to an inverted cone of 18/8 chromium nickel stainless steel from which the crystals are delivered to centrifuges to eliminate the bulk of the moisture.

In the 'A' plant, put into service in 1951, are two centrifugal machines supplied by Watson Laidlaw and Co. Ltd. of Glasgow. Both centrifuges are fitted with 18/8 Cr-Ni-Mo stainless steel baskets. When examined in October 1958, these units had achieved a throughput of 41,200 tons of ammonium sulphate and only two baskets had had to be replaced after being in service from 1951 until April 1957. In the 'B' plant, which came into operation in 1956, throughput for 1956, 1957 and nine months of 1958 was 12,626 tons. The baskets of the two machines, of 18/8/3 Cr-Ni-Mo stainless steel, are still in service.

Moisture Content.

All four centrifuges, Inco-Mond report (Inco-Mond Magazine, No. 10) reduce the moisture content of ammonium sulphate to 5% in about 15 min., following which the salt is fed to a rotating hot air dryer. On the average about 3½ cwt. of NH_4SO_4 is processed in each basket, each of which is emptied about three times an hour.

The stainless-steel shell plate of each basket is ½ in thick having perforations 7/32 in. dia., at 8 in. square pitch. Next comes a stainless-steel woven backing lining (16 meshes/sq.in. and thickness of wire of 17 s.w.g.).

The inner lining is a stainless-steel sheet of 21 gauge plate perforated with holes approximately 1/16 in. dia. By accurate control of the process, Abbey Works report that they can now obtain uniform, coarse-grain crystals which enable the salt to be free-flowing for bulk delivery to ship or fertiliser plants.

.....
 . B.D.H. URANIUM COMPOUNDS .
 . SHOW PRICE FALL .

Prices of uranium compounds for industrial use have fallen steeply, British Drug Houses (B.D.H. Laboratory Chemicals Division), Poole, Dorset, reports. More freely available to industry also is uranium oxide (UO_2) black technical. This is depleted in U^{235} , but it is satisfactory as a source of uranium for all purposes where the isotopic composition is not of importance.

Included in B.D.H.'s July list of new entries in the 1959 Catalogue is 1-2-pyridyl-azo-2-naphthol (PAN). This is a dye-stuff which forms coloured chelate compounds with several heavy metals and Cheng & Bray (*Anal. Chem.*, 1955 27, 782) have shown that it can be used as an indicator for complexometry. PAN is particularly useful since beryllium, aluminium and the alkaline earth metals give no coloured products, and this enables zinc and copper to be estimated in the presence of large amounts of alkaline earths.

Also available is Macdonald's reagent for determination of fat in milk and milk products (*Analyst* 1958 84, 287). Non-corrosive to glassware, the solution can be used with standard Gerber apparatus and is stated to give results with an accuracy equal to that of the Gerber method. As the solution is neutral there is no tendency for fat hydrolysis to take place if milk and reagent remain in contact for prolonged periods. Other new entries are acetone-dicarboxylic acid, hydroxy-coumarin, beta-propiolactone and tetra hydro-thiophene.

plasticiser alcohols via the Oxo process. He will be living at La Lezardiere, Cinq-Mars-la-Pile, Indre et Loire, France, where he will carry out industrial consultancy.

Air Chief Marshall Sir Claude Pelly has been appointed by the U.K. Atomic Energy Authority as Member (designate) for Weapons. Since 1956 he has been Controller of Aircraft for the Ministry of Supply. At the A.E.A. he will later this year succeed Sir William Penny who follows Sir John Cockcroft as Authority Member for Scientific Research.

Mr. E.J. Hill has been appointed to the board of Associated Chemical Companies (Sales) Ltd. as director in charge of home sales, in succession to the late Mr. Eric Hargreave. Mr. Hill joins the company in October after resigning as a director of Frank Segner & Co. and F.S. Bayley Clanahan & Co.

Mr. R.H. Bolt has retired from Hardman and Holden Ltd. after nearly 30 years' service. He is known particularly for his development of Manox blue pigments.

Mr. F. Goulding (general pharmaceutical sales manager) and Dr. A.M. Brunton (director, medical services) have been appointed directors of Pfizer Ltd., Folkestone, Kent. Dr. J.K. Morrison has been appointed head of clinical research.

Dr. H.R. Barnell has been appointed as Chief Scientific Adviser (Food) to the Ministry of Agriculture. He succeeds Dr. Norman Wright, who joined the Food and Agriculture Organisation of the United Nations in February, 1959.

Mr. J.E. Burn has resigned from the board of the United Indigo and Chemical Co.

Dr. F.D.S. Butement senior lecturer, department of inorganic and physical chemistry, Liverpool University, is to tour universities and nuclear establishments in South America.

£
 £ COMMERCIAL NEWS £
 £
 £

BRITISH TAR PRODUCTS. Net profit for British Tar Products Ltd. for the year to 31 March 1959 was £39,284 (£119,178). Dividend 13½% (same equivalent plus capital bonus 5%). Fixed assets are £314,376 (£205,869). Current assets are £325,640 (£448,890) and liabilities £144,919 (£146,979). Commitments total £11,000. Referring to products for plastics and chemical industries, chairman Mr. F. Woolley-Hart says that although profit margins tend to shrink prospects at home and abroad now appear somewhat brighter.

BENN BROTHERS, publishers of Chemical Age. Group profit for year ended 30 June was £76,775 (£71,574), before tax of £33,839 (£39,174). Dividend, already known, 12½% (15%). Fixed assets of £452,683 (£474,485) reflect revaluation of Bouverie House. Current assets are £504,306 (£589,011); current liabilities £155,552 (£181,641). Reserves total £377,788 (£5158,949).

FISONS LTD. Final stage in negotiations to acquire the world rights to the registered trade mark Liquinure and Liquinure formulations, from Dr. L. Blass, and in addition its manufacture and distribution from Ulvir, have been reached by Fisons Ltd. This change will become effective from October.

IMPERIAL CHEMICAL INDUSTRIES During July, £9,976,200 Loan Stock was converted into 6,883,578 I.C.I. £1. Ordinary shares. Of the original issue of £40m. Loan stock, £24,382,700 was converted in July, 1959, which together with the £9,976,200 now converted gives a total conversion to date of £34,358,900, representing approximately 86% of the original issue. Third and final op-

tion to convert the outstanding £5,641,100 into I.C.I. Ordinary will be exercisable July, 1960.

U.S. BORAX & CHEMICAL. United States Borax and Chemical, the U.S. operating company of Borax (Holdings), report record sales of \$17.5m. in the June quarter, compared with \$14.5m. in the corresponding 1958 period. Net income was \$2,036,716 against \$891,692. Sales for the nine months to 30 June amounted to \$47.3m., compared with \$39.8m. Net income was \$4,676,029 against \$1,493,061.

TRADE NOTES

Greeff Distributors for Amoco. R.W. Greeff & Co. have been appointed exclusive distributors for the U.K., N. Ireland and Eire for a number of Amoco's chemicals. They will work with Dr. A.J. Skey, European representative for Amoco Chemicals Corp., Chicago, who is located in London. Greeff will handle sales of Panarez hydrocarbon resins and resin solutions, Panapol hydrocarbon polymers, Panaflex plasticisers, isooctyl alcohol, decyl alcohol and methyl mercaptan.

New Address. Barter Trading Corporation Ltd., are from 18 August moving to 69 Grosvenor Street, London W.1.

Nansa Powders. Marchon Products Ltd., Whitehaven, have issued a combined leaflet on their free flowing alkyl aryl based range of Nansa powders.

New Metal-Rubber Laminate. A new type of sealing material - a laminate of light alloy sheet and Hycar synthetic rubber - has been marketed by Fireproof Tanks Ltd., Portsmouth. This laminate, known as Hy-Clad, combines the rigidity of metal with the oil resistance of Hycar, made by British Geon Ltd., enabling gaskets and washers to be used repeatedly without damage. Joints are fluid tight.

[illegible]

EAST GERMAN CHEMICAL PLANS. Accor-

ding to an East German Government statement, the country's engineering and heavy equipment industry will have doubled its output of capital goods for the chemical industry by 1965. In the period until then a total of 137 new chemical plants will be opened in East Germany, the number of individual sets of installations to exceed 400. By the end of the 7-year plan production of carbide in East Germany will have risen to 1.2m. tons. This will be realised by reconstruction of the carbide ovens in the nationally-owned Buna chemical works - which will be the largest carbide producer in the world - and the chemical works in Piesteritz and Hirschfelde. In addition production of soda is to be raised to 658,000 tons by 1965.

UNION CARBIDE'S ENTRY INTO FIBRES.

Because Union Carbide have taken an option on American Viscose's rayon plant at Roanoke, Va., U.S., observers believe the company is to enter the synthetic fibres field. Avisco closed their plant last autumn because of overcapacity in the industry. Union Carbide are now studying engineering and economic possibilities of the plant. At present, they produce Dynel - 8m.lb./year - but the company is interested in other fibres, such as polythene and polypropylene.

GREECE-HUNGARY AGREEMENT. Among the principal goods to be received by Greece under a trade agreement with Hungary are pharmaceuticals and chemical fertilisers.

THAILAND PHARMACEUTICAL PLANT

FOR MERCK. Licence to build a pharmaceutical plant in Thailand has been granted to Merck Inc. by the Government of Thailand. The new plant will make vitamins, diuretics, steroids, antibiotics and other pharmaceuticals. Con-

struction is to begin at once on a tract of land near Bangkok. First production is due about 1 January 1960. Initial investment, including plant and working capital, will be about \$1.5m. Merck Inc. will put up \$540,000, B.L.H. Trading Co., (Merck's distributors in Thailand) \$360,000 and Merck of Thailand \$550,000.

In 1958, pharmaceutical imports into Thailand totalled \$16 m. Merck's new plant will also serve an extra 180 m. people in South East Asia.

ITALIAN CHEMICAL OUTPUT UP. Though

aggregate production of Italian industry in May 1959 showed an increase of only 4.5% over May 1958, in the chemical industry the increase was 11.3%. For the period January-May 1959 production was 17% higher than in the corresponding period of 1958.

STAATSMIJNEN TO PRODUCE POLYTHENE.

Dutch State company, Staatsmijnen, announce that later this year they will produce polythene. They will also double their present urea capacity by erection of new plant (see 11 July. P.3.). The company had a 43% share in Holland's nitrogenous fertiliser export of 858,000 tonnes. Production of caprolactam, some of which Staatsmijnen is now exporting, rose by 8% on the 1957 figure.

FRANCO-GERMAN CHEMICAL GROUP. Two

French chemical concerns, Societe d'Electro-Chemie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine and Progil S.A., both of Paris, and the West German company Farbenfabriken Bayer AG, of Leverkusen, have formed a joint company. Bearing the name of Progil-Bayer-Ugine (P.B.U.), the French-registered firm will be concerned with production and marketing of isocyanates, polyesters and polyethers. With a head office in Paris, the company will work from a production plant to be erected near Grenoble. Amount of the company's capital has not yet been decided upon, but it is announced that Farbenfabriken Bayer will

hold 50% and the two French concerns together the remaining 50%. The new company's aim is mainly to serve the growing demand for its products in Metropolitan France and the franc zone, but its products will also be exported.

ITALIAN SULPHUR INDUSTRY. During May, Italian Sulphur Board (Ente Zolfi Italiani) received from producers 10,263 tonnes of sulphur. During the same month the board succeeded in marketing 10,678 tonnes of sulphur (5,100 tonnes of which were exported abroad.) Thus by 1 June reserve stocks diminished very slightly and totalled 225,141 tonnes.

WESTERN GERMANY'S PLASTICS. In the first four months of this year almost 244,000 tonnes of plastics were produced, or 21% more than in the same period of last year. Polymerisation plastics, at 115,000 tonnes of this total, were 29% up on 1958, while in this group the output of polyolefins rose by 50%. At the same time, plastics imports were up by 25% over the period while exports rose by only 23%. Best plastics supplier and customer of West Germany was the U.S.

The U.K. imported German plastics worth about £1,475,000 and exported plastics worth £319,000 to West Germany.

SPAIN LIBERALISES CHEMICAL IMPORTS. Chemicals, synthetic rubber and mineral oil by-products are among the hundred commodities which may now be imported with no restriction on quantity into Spain from a number of foreign countries, including the whole O.E.E.C. block. The import liberalisation list, published in Madrid two weeks ago, comes into immediate effect.

U.S. PATENT FEES MAY RISE. Increased fees for U.S. patents are likely if Congress approves Bill H.R. 2739. Increases proposed are: patent application fees - from \$30 to \$40, with a \$2.00 charge for each claim over five; fee at time patent is issued will go up from \$30 to \$50 with a

\$2.00 charge for each claim over five. If approved, fees will cover about 50% of the U.S. Patent Office's operating costs; under present schedules, fees cover less than 35% of these costs.

I.G. FARBEN LIQUIDATORS AND SHARE SALES. Liquidators of the I.G. Farben company have laid a report before the U.S. Congress to say that the fact that they decided not to appeal against the Washington District Court's decision in the General Aniline and Film Corp. lawsuit between the Swiss Interhandel company and the U.S. Government does not mean that they have given up their claims on the corporation's shares. They want recognition of shareholders of the company-in-liquidation and a share in the proceeds from any sale of General Aniline and Film.

FERTILIZERS & CHEMICALS' SUBSIDY. Fertilizers and Chemicals Co. in Israel are making strict economies to compensate for the reduction of the £23 million Government subsidy by £2500,000. The subsidy compensates the company for the high cost of local raw materials, and enables it to keep fertiliser prices down. Overhead expenses for training and production engineering at the plant are to be reduced, as well as manpower. The plant, which employs 1,023 people, sold £213 million worth of products on the local market, as well as \$1 million in exports, during 1957-58. During that period, the company saved Israel \$3 million, formerly spent to import fertilisers, in addition to the \$400,000 earned by exports.

WORLD'S LARGEST POTASH EXPORTER. With sales to 43 countries totalling 1m. tons in 1958, East Germany is stated to be the world's largest potash (K_2O) exporter. Since 1950 output of potash salts has risen by 25% to 1.5m. tons. A further increase, by 38%, to 2.12m. tons of pure potash annually, is envisaged for 1965. Priority will be given to granular non-caking potash.

ANGLO-DAL LIMITED

NEW OXFORD HOUSE, BLOOMSBURY WAY, LONDON, W.C.1

TELEPHONE: HOLBORN 4366 (10 LINES)

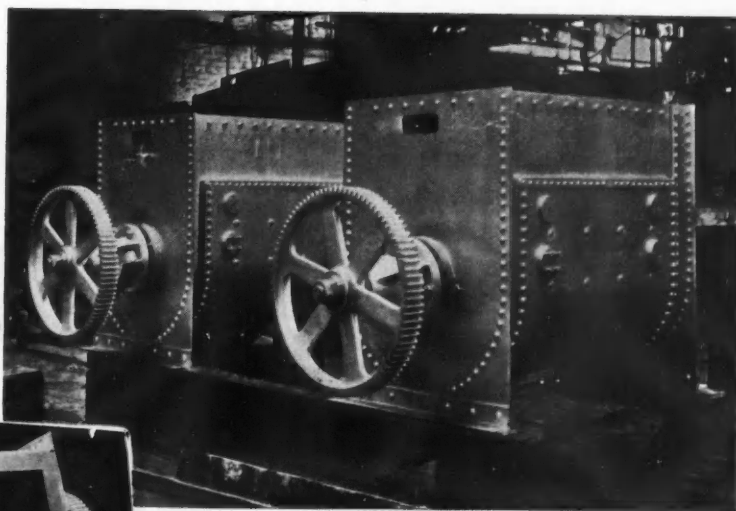
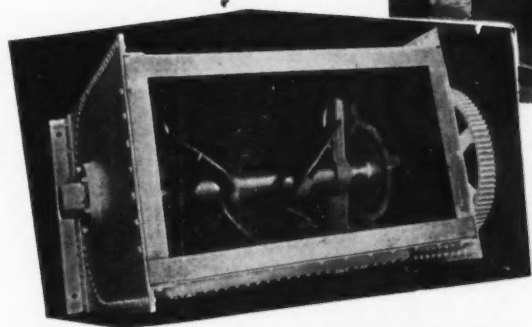
SOLE REPRESENTATIVES
IN THE U.K. FOR

C I E C H

W A R S A W

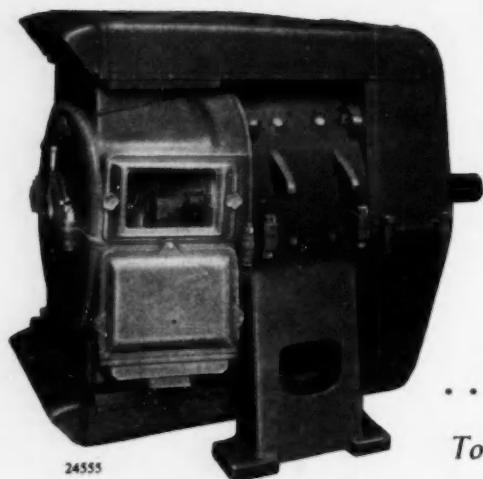
For Inorganic Chemicals, Organic Chemicals, Pharmaceuticals, Dyestuffs, Carbon Products, Petroleum and Coal Chemicals, Essential Oils, and Miscellaneous Products

MIXING VESSELS



These hot water jacketed Mixing Vessels (capacity $\frac{1}{2}$ Ton each) are for use in chocolate manufacture. The lower photograph shows the stirring gear. We manufacture Mixers, Blenders and Process Vessels for a wide range of Industries and applications.

POTT, CASSELS & WILLIAMSON LTD • MOTHERWELL • SCOTLAND



The illustration shows a Metrovick totally enclosed closed air circuit direct-current motor with integral fan-operated air cooling circuits.

No Admittance . . .

*... to dirt and dust,
acid splashes,
corrosive fumes in
gas works, boiler houses
and coke oven plants*

. . . When you employ **AEI**

Totally enclosed closed air circuit Motors

ASSOCIATED ELECTRICAL INDUSTRIES LIMITED

MOTOR & CONTROL GEAR DIVISION

RUGBY & MANCHESTER, ENGLAND



INCORPORATING THE MOTOR & CONTROL GEAR INTERESTS OF BTH & M-V



**ACID & ALKALI
RESISTING LININGS
IN
BRICK, TILE, P.V.C.**

**RUBBER
FOR ALL TRADES**

**COMPLETE PLANTS
FOR PICKLING
FUME EXTRACTION
&
EFFLUENT
TREATMENT**

PICKLING TANKS 90 FEET LONG WORKING SUCCESSFULLY

RIZISTAL

ALL BRITISH GUARANTEED PRODUCTS



MANUFACTURERS

OF

**SILICA, LATEX,
CASHEW, FURANE, &
POLYESTER RESIN CEMENTS**

**SKYMMIT & BRUSH-ON
IMPERVIOUS COATINGS**

**P.V.C. & STAINLESS STEEL
FABRICATIONS FOR ALL PURPOSES**

**JOHN L. LORD & SON
WELLINGTON CEMENT WORKS
BURY, LANCASHIRE**

**TELEGRAMS: "CEMENT"
TELEPHONE: BURY 617**

